FIX-N-FAX 176

CALIFORNIA DEPARTMENT OF FORESTRY
AND FIRE PROTECTION

Number 176

Mandatory Compliance
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CDF HYDROSTATIC ENGINES #1, #5, #14, #15 AND #17
(Hydrostatic Testing Procedures)

These instructions are for 20 Series System Only!
Hydrostatic System noise or fire pump performance issues

(1) Confirm that hydrostatic control cable is free and not binding, remove clevis from control handle at linkage on hydraulic pump control valve.

(2) Confirm Sunstrand pump is in neutral and hydraulic motor shaft is not rotating in either direction.

(3) Check suction filter gauge, should read no more than 7" vacuum with engine running, pump in neutral, throttle at 1000 RPM's, hydraulic oil temperature at least 70+degrees.

(4) Install test gauges on system, 6000-PSI gauge at high-pressure port at side of motor block. (Fitting opposite of High Pressure line into motor assembly.) 1000-PSI gauge in rear port of motor block to check charge pressure in correct fire pump rotation (Flowing water). Install 1000-PSI gauge in fitting at side of hydraulic pump, to check charge pressure in Neutral and correct fire pump rotation.

(5) All tests are made at 1000 RPM's with hydraulic oil temperature over 70 degrees.

(6) Charge pressure should be 180 to 210-PSI, engine running, and hydraulic pump in Neutral. (Confirm that hydraulic motor is not rotating).

(7) Charge pressure should be 160 to 190-PSI, engine running, and water pump circulating water (water pressure not important at this time, just confirm that water is circulating).

(8) To adjust pump charge pressure remove metal cap from charge pressure relief. Use 9/16" wrench and " Allen wrench. Clockwise to raise pressure, counter clockwise to lower pressure.

(9) To adjust motor charge pressure, remove motor cap from hydraulic motor charge pressure relief. To adjust, confirm motor is rotating in correct direction and water pump is circulating water. Clockwise to raise pressure, counter clockwise to lower pressure.

The following procedures are for checking and setting the high side of system during pumping operation. This needs to be done from draft, 500GPM's @ 150-PSI.

(1) Install high-pressure test gauges to motor port (6,000LB gauge).

(2) Have apparatus set up for drafting to flow rate at 500GPM's @ 150-PSI.

(3) Set engine RPM's at 1800, engage hydrostatic system to flow 500 GPM's @ 150-PSI.

(4) At 500GPM's, hydraulic test gauge readings should be 3600 lbs. to 4400 lbs.; if above or below, adjust throw at hydraulic control valve, to maintain hydraulic pressure needed to flow 500 GPM @ 150 lbs. pressure.

(5) If correct water flow cannot be attained, ensure there is not a basic water flow related problem. Ref. Pressure/volume valving, pressure relief components, water valving restricted flow, and water pump.

General Comments: Check Hydraulic Reservoir for contamination. Verify hydraulic motor rotation and fire pump rotation matches.

(see FIX-N-FAX Index)